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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/803,418	03/09/2001	Lawrence E. Conway	RDM 01-002	4815

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WESTINGHOUSE ELECTRIC COMPANY, LLC  
P.O. BOX 355  
PITTSBURGH, PA 15230-0355

EXAMINER

RICHARDSON, JOHN A

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 02/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/803,418

Applicant(s)

CONWAY ET AL.

Examiner

John Richardson

Art Unit

3641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 to 36 is/are pending in the application.
- 4a) Of the above claim(s) 1 to 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 to 21 is/are rejected. **21-36**
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Non Final Rejection***

1). Applicant's election without traverse of group III, species A, number of 4 steam generators, and 6 suppression tanks in Paper No. 9 dated December 11 2002 is acknowledged.

2). Claims 1 to 20 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected groups, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No.9.

3). The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4). The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5). The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6). The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

✓ 7). Claims 21 to 29 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

There is no adequate description nor enabling disclosure of how and in what manner the limitation of **extending outside of containment** is to be interpreted. For example, is this intended to be an additional barrier or containing structure to the **containment structure** identified in the claim pre-amble, or does it imply an alternate form of containing the pressurized water reactor?

Note that a disclosure in an application, to be complete, must contain such description and detail as to enable any person skilled in the art or science to which the invention pertains to make and use the invention as of its filing date, In re Glass, 181 USPQ 31.

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✓ 8). Claims 21 to 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 recites the limitation "**extending outside of containment**" in line 5. There is insufficient antecedent basis for this limitation in the claim.

✓ 9). Claims 24 to 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 24 recites the limitation "**using gas**" in line 4. There is insufficient antecedent basis for this limitation in the claim.

The claims are vague, indefinite and incomplete as to what is meant by **using gas**. For example, is the **gas** an inert gas system, a post-accident combination of oxygen and hydrogen resulting from an reactor accident condition, or a gas / steam mixture resulting from a coolant pipe break or rupture?

As presently set forth the metes and bounds of the claims are undefined.

X 10). Claims 32 to 36 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

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There is no adequate description nor enabling disclosure of how and in what manner the limitation of **containment filled with gas** is to be interpreted. For example, what is the source and type of **gas** implied by this limitation?

Note that a disclosure in an application, to be complete, must contain such description and detail as to enable any person skilled in the art or science to which the invention pertains to make and use the invention as of its filing date, In re Glass, 181 USPQ 31.

~~11)~~ Claims 32 to 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 32 recites the limitation "**containment filled with gas**" in line 2.

The claims are vague, indefinite and incomplete as to what is meant by **containment filled with gas**. For example, is the **gas** an inert gas system, a post-accident combination of oxygen and hydrogen resulting from an reactor accident condition, or a gas / steam mixture resulting from a coolant pipe break or rupture?

As presently set forth the metes and bounds of the claims are undefined.

12). Claims 30 to 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Gardner et al (U.S. 5,102,616).

The reference discloses a process for providing passive emergency core cooling and residual core heat removal for a variety of pressurized water reactor systems comprising a gas containing structure (item 122, Column 26, lines 36-56), an integral nuclear reactor pressure vessel (item 12) containing a core (item 14), integral a plurality of steam generators (items 42) located in the reactor coolant pool within said pressure vessel, a means for disposing said pressure vessel in a flooded cavity (see for example, Figures 6 to 8, 11 to 12), a suppression tank located within the said containment at an elevated level with respect to the said reactor vessel (for example, item 134), a means for introducing gas / steam mixture through valve 144 to the said containment structure in the event of abnormal / accident conditions and transferring water from the said suppression tank to the said flooded cavity, as depicted in for example, Figures 11, 12, relating to claims 31, 33, 35, the water transfer to the said flooded cavity from the said suppression tank is by gravity (Column 26, lines 64+), relating to claims 34 to 36, the reference discloses a means for gravity transfer of water from suppression tank item 134 to the said pressure vessel item 12 through the water circuit shown for example on the left hand portion of Figure 11.

13). Claims 21 to 26, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al (U.S. 5,102,616) in view of Schulz (U.S. 5,255,296).

The reference discloses a process for providing passive emergency core cooling and residual core heat removal for a variety of pressurized water reactor systems comprising a gas containing structure (item 122, Column 26, lines 36-56), an integral nuclear reactor pressure vessel (item 12) containing a core (item 14), integral a plurality of steam generators (items 42) located in the reactor coolant pool within said pressure vessel, a means for disposing said pressure vessel in a flooded cavity (see for example, Figures 6 to 8, 11 to 12), a suppression tank located within the said containment at an elevated level with respect to the said reactor vessel (for example, item 134), a means for introducing gas / steam mixture through valve 144 to the said containment structure in the event of abnormal / accident conditions and transferring water from the said suppression tank to the said flooded cavity, as depicted in for example, Figures 11, 12, and an external heat removal circuit situated outside of the said containment (see for example, item 60 shown in Figure 7) relating to claims 23, 25, the water transfer to the said flooded cavity from the said suppression tank is by gravity under abnormal / accident conditions (Column 26, lines 64+), relating to claims 22, 24, 26, 29, the reference discloses a means for gravity transfer of water from suppression tank item 134 to the said pressure vessel item 12 through the water circuit through the action of the gas / steam mixture resulting from the said abnormal / accident conditions in the said reactor pressure vessel, as shown for example on the left hand portion of Figure 11.



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The reference discloses the claimed invention except for citing a specific time period within about three hours for the residual heat removal period of operation. It would have been obvious to one of ordinary skill in the art at the time of the invention to have stipulated the limitation of **three** hours, since it has been held that the general conditions of a claim are disclosed in the prior art, see for example, the secondary reference Shulz (Column 2, lines 18 to 35, stating several hours), discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPTO 233. ←

14). Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al (U.S. 5,102,616) in view of Schulz (U.S. 5,255,296) as applied to claims 21 to 26, 29.

The reference discloses the claimed invention except for reciting a diverse means for external cooling the containment structure. The secondary reference discloses that it is well known in the nuclear art to provide an external containment cooling means. It would have been obvious to one of ordinary skill in the art at the time of the invention, to have incorporated an external cooling means as shown in Shulz (see Column 6, lines 35 to 43, in order extend the protection time for the containment structure. ↗

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15). Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al (U.S. 5,102,616) in view of Schulz (U.S. 5,255,296) as applied to claims 21 to 26, 29, in further view of Sawabe (U.S. 5,278,876).

The reference discloses the claimed invention except for reciting a means for venting the reactor pressure vessel head. The secondary reference discloses that it is well known in the nuclear art to provide reactor pressure vessel head venting. It would have been obvious to one of ordinary skill in the art at the time of the invention, to have incorporated an vessel head venting means as shown in Sawabe (see Figure 2, items 30, 50, Column 3, lines 8 to 34) in order to release non-condensable gases resulting from abnormal / accident conditions of operation.

16). The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

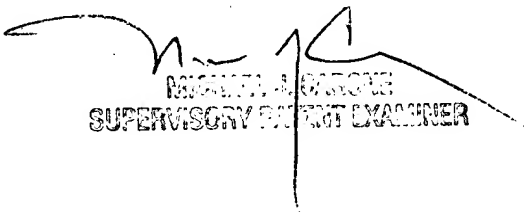
17). Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Richardson whose telephone number is (703) 305 0764. The examiner can normally be reached on Monday to Thursday from 7.00 AM to 4.30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone, can be reached on (703) 306 4198. The fax phone number for the organization where this application or proceeding is assigned is (703) 305 7687.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 1113.

John Richardson, PE,

February 12 2003.

  
MICHAEL J. CARONE  
SUPERVISORY PATENT EXAMINER